

REMARKS

This Application has been carefully reviewed in light of the Final Office Action mailed June 14, 2005. At the time of the Final Office Action, Claims 12-26 were pending in this Application. Claims 1-11 were previously cancelled by Applicants without prejudice or disclaimer. Claims 12-26 were rejected. Claims 12, 14, 20, and 24-26 have been amended to further define various features of Applicants' invention. Applicants respectfully request reconsideration and favorable action in this case.

Rejections under 35 U.S.C. §103

Claims 12-24 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,330,510 issued to Yutaka Takaku et al. ("Takaku et al.") in view of Applicants' admitted prior art or alternatively over U.S. Patent 6,257,197 issued to Hirofumi Nishimura et al. ("Nishimura et al.") in view of Applicants' admitted prior art. Applicants respectfully traverse and submit the cited art combination, even if proper, which Applicants do not concede, does not render the claimed embodiments of the invention obvious.

Claims 25 and 26 were rejected under 35 U.S.C. §103(a) as being unpatentable over Takaku et al. in view of Applicants' admitted prior art, and further in view of U.S. Patent 5,878,712 issued to Peter Wolters et al. ("Wolters et al.") or U.S. Patent 6,705,280 issued to Eduard Lippert ("Lippert"). Applicants respectfully traverse and submit the cited art combination, even if proper, which Applicants do not concede, does not render the claimed embodiments of the invention obvious.

Claims 25 and 26 were also rejected under 35 U.S.C. §103(a) as being unpatentable over Nishimura et al. in view of Applicants' admitted prior art, and further in view of Wolters et al. or Lippert. Applicants respectfully traverse and submit the cited art combination, even if proper, which Applicants do not concede, does not render the claimed embodiments of the invention obvious.

In order to establish a *prima facie* case of obviousness, the references cited by the Examiner must disclose all claimed limitations. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). Furthermore, according to § 2143 of the Manual of Patent Examining Procedure, to establish a *prima facie* case of obviousness, three basic criteria must be met.

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Paragraph [0009] in the specification contains a mis-translation which up to this point has not been noticed. The original German specification of the PCT application included the term "stehender Wirbel." This term has been inadvertently and without deceptive intent translated with "vertical swirl." However, the correct translation should have been "stationary swirl." Applicant amended paragraph [0009] to amend this mistake. Therefore, contrary to the Examiner's assumption, the present application does not admit that the prior art teaches a tumble but rather a stationary swirl.

Moreover, non of the prior art teaches to use a tumble for causing an intermixing of the residual exhaust gas portion with the fresh gas drawn in. This limitation is included in all independent claims and is disclosed in the original submitted specification in paragraph [0020] on page 8.

The prior art merely disclose the use of a swirl or tumble to impose a certain movement on the incoming gas. This known effect is particularly disclosed in another prior art which has already been considered, namely US 5,918,577. US 5,918,577 clearly discloses how a person skilled in the art would use a swirl, shown in Figs. 5 and 6, or tumble flow, shown in Figs. 7 and 8. The exhaust residual 70 and the air fuel mixture 80 both undergo the respective swirl or tumble. However, neither the tumble or the swirl are created in a way that an intermixing of the two streams occurs. On the contrary, both types of charging cause a stratified charging in which the exhaust gases and the air fuel mixture remain separated.

The Examiner further cited the Shiraishi reference to explain the effect of a tumble flow. As stated above, Shiraishi actually confirms that this technology is used to create an air wall. Any type of intermixing is actually unwanted and prevented by this technique. See in particular paragraph 136, line 30 of Shiraishi.

In paragraph [0009] of the present specification, Applicants merely admit that internal exhaust gas recirculation is known in the prior art, as for example disclosed in the US 5,918,577. However, paragraph [0009] is silent about intermixing of exhaust gas and gas-air mixture. The term mixture formation in paragraph [0009] does not refer to an intermixing but rather just to a formation of a mixture as known in the art. Paragraph [0018] further discloses amongst others details of the prior art concepts and explains the disadvantages of the known techniques which lack the limitation of intermixing the residual exhaust gases with the incoming air fuel mixture.

As correctly stated by the Examiner, Takaku does not teach to use an internal exhaust recirculation. Takaku merely teaches the use of a swirl control valve 7 to produce a swirl as already known in the art. Thus, even if Takaku is combined with the known technique of internal recirculation, such as for example, the one shown in US 5,918,577, such a combination would still result in a stratified charging in which no intermixing of internally recirculated exhaust gas and fuel air mixture would take place. Also a combination with known tumble control valves would lead to the same result lacking the feature of intermixing.

A combination of Nishimura and the known concepts of internal exhaust gas recirculation does not add anything beyond the Takaku reference. In fact none of the cited prior art discloses the specific use of a tumble flow to cause intermixing of residual exhaust gas with the incoming fuel-air mixture.

Applicants respectfully submit that the dependent Claims are allowable at least to the extent of the independent Claims to which they refer, respectively. Thus, Applicants respectfully request reconsideration and allowance of the dependent Claims. Applicants reserve the right to make further arguments regarding the Examiner's rejections under 35 U.S.C. §103(a), if necessary, and do not concede that the Examiner's proposed combinations are proper.

CONCLUSION

Applicants have now made an earnest effort to place this case in condition for allowance in light of the amendments and remarks set forth above. Applicants respectfully request reconsideration of the claims as amended.

Applicants enclose a Request for Continued Examination (RCE) and authorize the Commissioner to charge the required fee of \$790.00 to Deposit Account No. 50-2148 of Baker Botts L.L.P. Applicants believe there are no additional fees due at this time, however, the Commissioner is hereby authorized to charge any fees necessary or credit any overpayment to Deposit Account No. 50-2148 of Baker Botts L.L.P.

If there are any matters concerning this Application that may be cleared up in a telephone conversation, please contact Applicants' attorney at 512.322.2545.

Respectfully submitted,
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Limited Recognition Under 37 C.F.R. §11.9(b)

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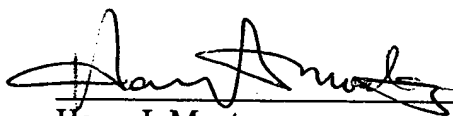
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